

### ABSTRACT

An assembly for a fuel cell including an electrically conductive fluid distribution element including a flow field disposed on a surface of the element, wherein the flow field includes a plurality of channels for carrying the gaseous reactants of the fuel cell. The assembly also includes an electrically conductive member disposed at the surface of the element to serve as a gas diffusion media. The channels of the element include a plurality of sidewalls formed in various orientations, and the orientations of the side-walls form a cross-sectional geometry of the channel such that water collection regions are formed at an interface of the electrically conductive fluid distribution element and the electrically conductive member, and at a bottom portion of the channel.